

STANFORD UNIVERSITY
STANFORD, CALIFORNIA

DEPARTMENT OF BIOLOGICAL SCIENCES

September 18, 1954

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
Madison, Wisconsin

Dear Dr. Lederberg:

I am having the exceptional experience of spending a postdoctoral year with Dr. E. L. Tatum. My project to some extent will be a continuation of my research on N-D-glucosylglycine (GG), which began as a nutritional study with Lactobacillus gayoni in the laboratory of Dr. Vernon H. Cheldelin at Oregon State College. I have found several intermediates of the Maillard reaction (the heat induced "browning" of reducing sugars), including GG, which can stimulate the early growth of L. gayoni. GG can also stimulate the formation of 4-amino-5-imidazolecarboxamide by sulfadiazine inhibited E. coli, although GG does not seem to be directly involved in purine synthesis. GG may also serve as an energy substrate for E. coli, but its utilization does not seem to be a simple hydrolysis to glucose and glycine. The possibility is suggested that GG is converted to glucose-1-P, and I am interested in establishing this reaction to explain the biosynthesis of GG.

Some time ago, Doudoroff et al (J. Biol. Chem., 177, 921 (1949)) showed that an E. coli mutant, W-327, could grow on maltose, but not on glucose. Their explanation was, as you will recall, that maltose was converted to glucose-1-P for utilization, while apparently the block which prevented the mutant from utilizing glucose involved hexokinase. I wonder whether this mutant is still available and whether you would be willing to provide me with a culture to be used in this proposed study. I would be very appreciative of any help that you may offer.

Very truly yours,


Dexter Rogers